

Item	Qty -145	Part Number	Description
1	X	D412-664-145	CROSSTUBE ASSEMBLY (412 LOW-NARROW FWD)
2	1	D6019-128	CROSSTUBE
3	2	D2893-1	SUPPORT
4	1	D3189-3	CHAFING SHIELD
5	4	D3595-063-450	RUBBER CUSHION
6	2	MS21920-24	CLAMP
7	4	MS21920-25	CLAMP (OR MS21920-26)
8	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6019-128
FINISHED LENGTH = 124.476±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D412-664-145" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS
- 7) WEIGHT: 24.8 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR D3189-3 CHAFING SHIELD AND ASSOCIATED HARDWARE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

MACHINING

- 10) RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.

BENDING

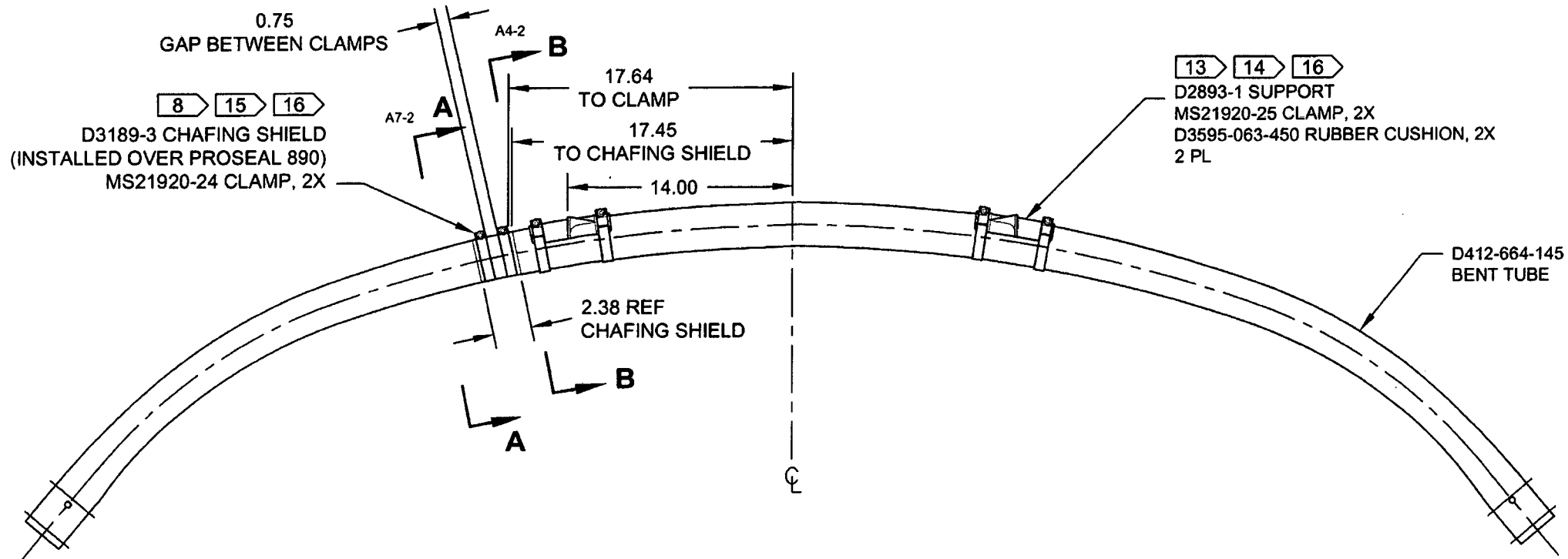
- 11) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7.2% (BASED ON O.D.) IN LOWER HALF OF R30 BEND AND 6% (BASED ON O.D.) ON REMAINING TUBE.
- 12) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

ASSEMBLY

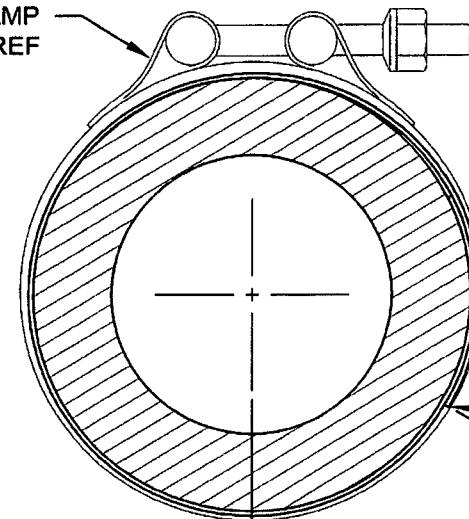
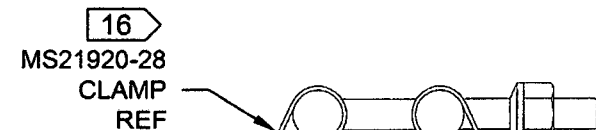
- 13) TO INSTALL D2893-1 SUPPORT: ABRABE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 14) INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2893-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON THE TOP SIDE OF THE CROSSTUBE.
- 15) APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3189-3 CHAFING SHIELD AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEALED D3189-3 CHAFING SHIELD ONTO CROSSTUBE BY APPLYING A THIN COAT OF PROSEAL 890 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.
- 16) TORQUE CLAMPS ON D2893-1 SUPPORT 80 TO 100 IN-LB. TORQUE CLAMPS ON D3189-3 CHAFING SHIELD 40 TO 50 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS

RELEASED
2014 -05- 26

E	PROSEAL WAS MAGNOBOND (C8-1), REORDER NOTES, NOTE 16: ADD 72HR CURE & RETORQUE, NOTE 11: ADD 7.2% ALLOWABLE CUSHING, CLAMPS REVERSED TO PREVENT CHAFING (B5-2), INCORP DEO D-1/-2/-3	CP	14.04.01
D	REVISE GENERAL NOTES; UPDATE TO CURRENT STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A8-3); ADD NOTE (ZN B3-2)	RF	09.09.30
C	CHG CLAMP & RUBBER CUSHION LGTH.	CP	07.03.29
B	CHG RUBBER CUSHION	CP	07.03.01
A	NEW ISSUE	CP	06.12.21
REV.	DESCRIPTION	BY	DATE
DESIGN	q	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	q		
CHECKED	DW	DRAWING NO.	REV. E
MFG. APPR.	LOH	D412-664-145	SHEET 1 OF 4
APPROVED	WJ	TITLE	SCALE
DE APPR.	WJ	CROSSTUBE ASS'Y (412 LOW-N FWD)	NTS
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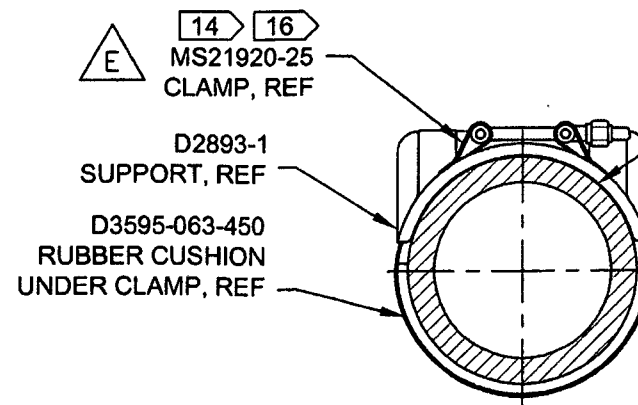


**D412-664-145
ASSEMBLY DETAIL**



SECTION A-A D6-2
SCALE 8X

E
WRAP D3189-3 AROUND
TUBE AND ORIENT
OVERLAP AS SHOWN



SECTION B-B D5-2
SCALE 4X

E
APPLY PROSEAL
BETWEEN D2893-1 AND
THE CROSSTUBE

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2014-05-26
MS

DESIGN	qp	DART AEROSPACE LTD	
DRAWN	qp	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DW	DRAWING NO.	REV. E
MFG. APPR.	[Signature]	D412-664-145	SHEET 2 OF 4
APPROVED	[Signature]	TITLE	SCALE
DE APPR.	[Signature]	CROSSTUBE ASS'Y (412 LOW-N FWD)	NTS
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C

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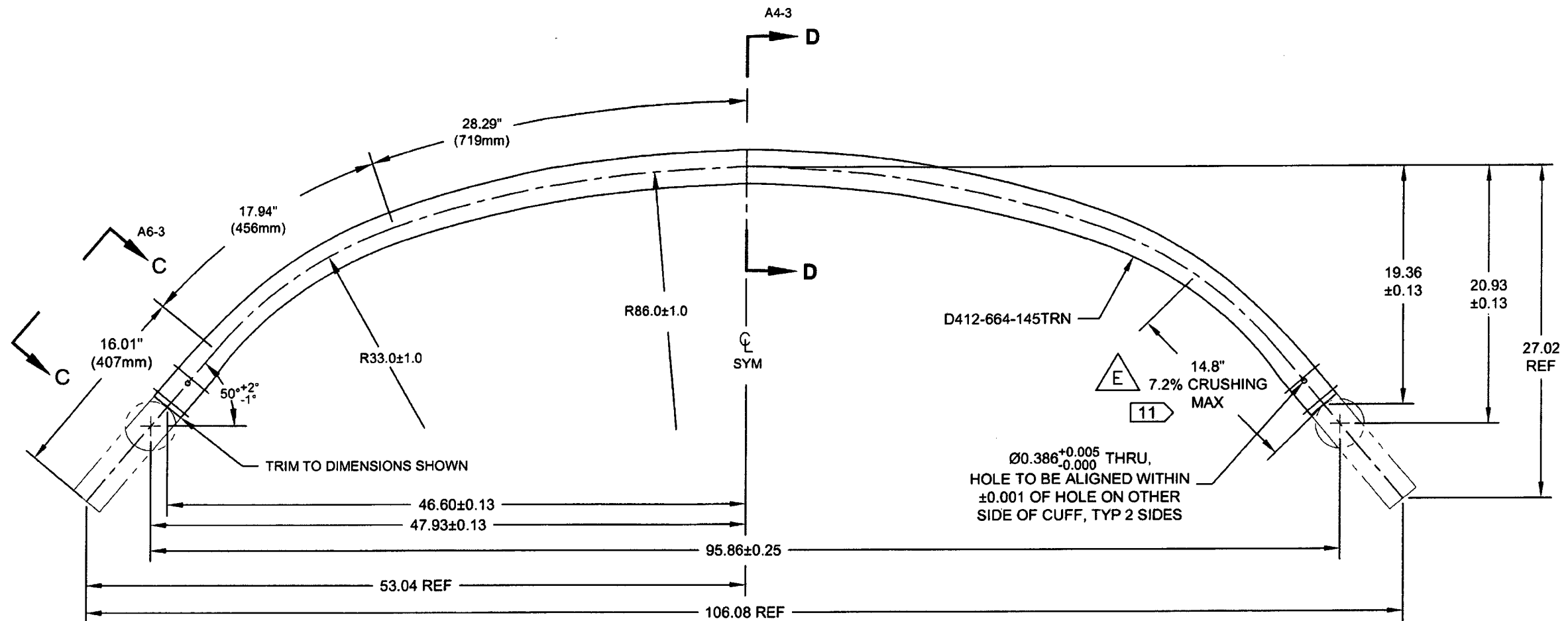
A

D

C

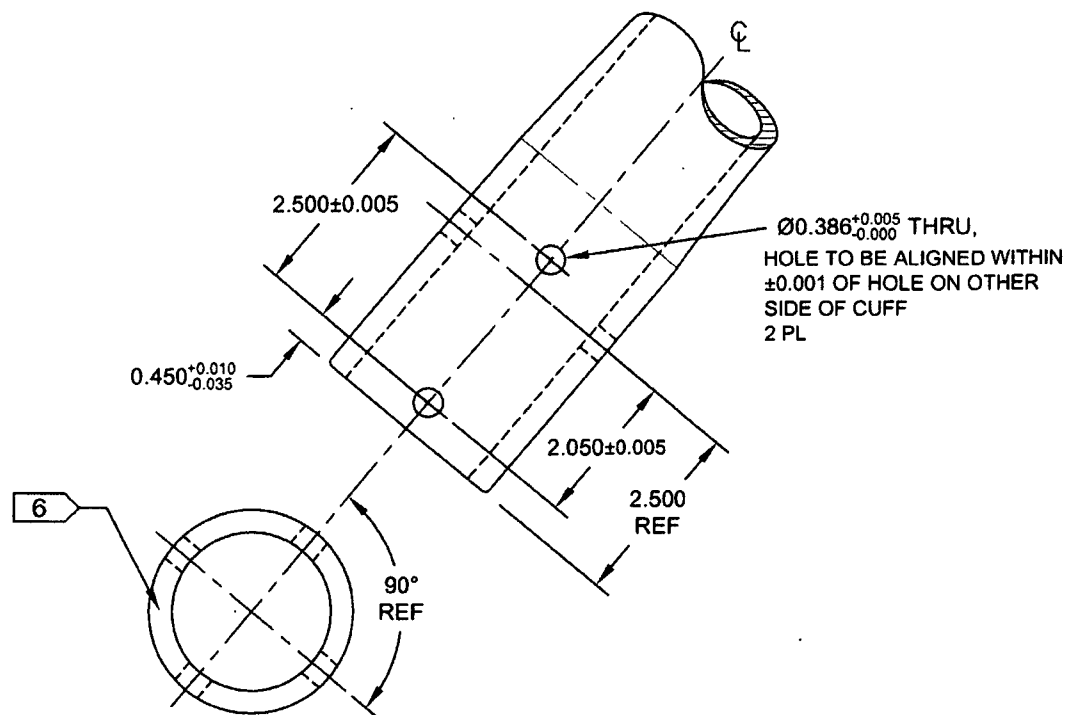
B

A

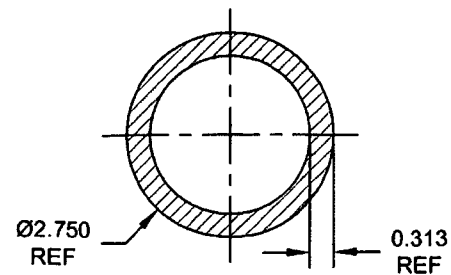


D412-664-145
BENDING AND DRILLING DETAIL

11



VIEW C-C: CUFF DETAIL D7-3
SCALE 4X



SECTION D-D D4-3
SCALE 3X

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2014-05-26

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DRAWN	qp	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DW	DRAWING NO.	REV. E
MFG. APPR.		D412-664-145	SHEET 3 OF 4
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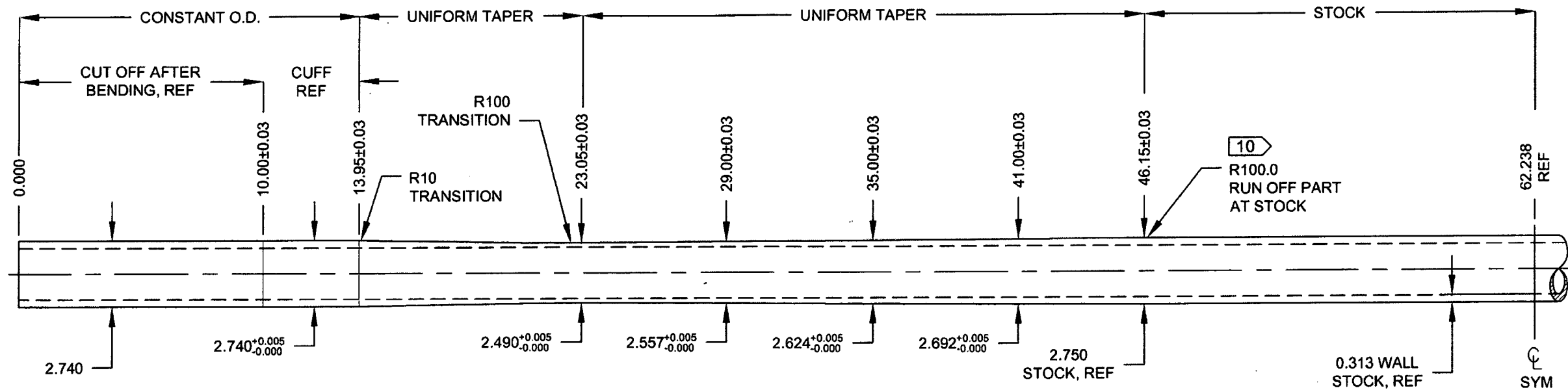
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4

3

2

1



D412-664-145TRN
TURNING DETAIL

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2014-05-26

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
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MFG. APPR.		D412-664-145	SHEET 4 OF 4
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